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09/763,135	06/05/2001	David Seneor	3848-010270	3534

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EXAMINER

BRUENJES, CHRISTOPHER P

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 10/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/763,135

Applicant(s)

SENEOR, DAVID

Examiner

Christopher P. Bruenjes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-6 and 8-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6 and 8-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

PD

DETAILED ACTION

WITHDRAWN REJECTIONS

1. The 35 U.S.C. 102 rejections of claims 4, 6-8, 10, 13-15, and 19-22 as anticipated by Robbins of record in the Office Action mailed April 19, 2005, Pages 3-6 Paragraph 6, have been withdrawn due to Applicant's amendments in the Paper filed August 22, 2005.

2. The 35 U.S.C. 103 rejections of claims 1-3, 9, and 17 over Robbins of record in the Office Action mailed April 19, 2005, Pages 7-11 Paragraph 8, have been withdrawn due to Applicant's amendments in the Paper filed August 22, 2005.

3. The 35 U.S.C. 103 rejections of claims 5 and 16 over Robbins in view of Mitchell of record in the Office Action mailed April 19, 2005, Page 11 Paragraph 9, have been withdrawn due to Applicant's amendments in the Paper filed August 22, 2005.

4. The 35 U.S.C. 103 rejections of claims 11, 12, and 18 over Robbins in view of Bartelloni of record in the Office Action mailed April 19, 2005, Pages 11-12 Paragraph 10, have been

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withdrawn due to Applicant's amendments in the Paper filed August 22, 2005.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35

U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1, 2, 4-6, and 8-22 are rejected under 35

U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 1 and 4, the limitation "structural" is not described in the specification. The specification does not describe the polyurethane as structural either explicitly or implicitly.

Regarding claims 4 and 13, the limitation that the process consists of the steps claimed is matter which was not described in the specification in such a way as to reasonably convey to

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one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. Specifically, the only process described in the specification requires a step of jet-blasting portions or at least roughening portions of the outer surface of the main reservoir and placing a sensor within a gap between the two reservoirs. Therefore, the specification does not support an embodiment in which only the steps claimed in claims 4 and 13 are used to form an underground reservoir.

Claims 2, 5-6, 8-12, and 14-22 are rejected as including limitations of claims 1, 4 or 13 respectively.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1, 2, 4-6, 8-12, 15, and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 4, the limitation "structural" polyurethane renders the claim vague and indefinite because it

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is not understood what properties are needed for a layer to be considered "structural".

Regarding claim 4, the limitation "wherein a gap for receiving a sensor is defined between the inner reservoir and the outer reservoir" renders the claim vague and indefinite in light of the closed language of the newly amended claim. The claim is restricted to only the three method steps claimed and it is not understood how a gap is formed from without at least one additional step.

Claim 5 is dependent on claim 4, which is written in closed language, which consists of only the steps claimed in claim 4. It is not understood how an additional step can be performed in a process that is written in closed language.

Regarding claim 15, the limitation "wherein a gap for receiving a sensor is defined between the inner reservoir and the outer reservoir" renders the claim vague and indefinite in light of the closed language of newly amended claim 13, in which claim 15 depends. The claim is restricted to only the three method steps claimed and it is not understood how a gap is formed from without at least one additional step.

Claim 16 is dependent on claim 13, which is written in closed language, which consists of only the steps claimed in

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claim 13. It is not understood how an additional step can be performed in a process that is written in closed language.

Claims 2, 6, and 8-12 are rejected because they contain the rejected limitations of claims 1 or 4 respectively.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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7. Claims 1, 2, 4, 6, 8-10, 13-15, 17, and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robbins (USPN 5,167,352) in view of Mowrer (USPN 4,695,618).

Regarding claims 1-2 and 9, Robbins anticipates an underground reservoir for storing liquid products (col.1, 1.13-15). The underground reservoir consists of an inner, main reservoir and an outer, secondary reservoir (col.1, 1.15-18). The inner, main reservoir is made of carbon steel (col.16, 1.57-60 and col.17, 1.15-17). The secondary, outer reservoir consists of an inner layer consisting of a one-sided corrugated cardboard (col.16, 1.44-47), in which cardboard is a paper material and the one sided corrugated cardboard is impervious to the outer coating layer of resin (col.17, 1.1-11). The outer layer of resin is formed with or without fiber-reinforcement from polyurethane (col.12, 1.34-39). The thickness of the outer layer is approximately 0.1 inch or 2.54mm (col.12, 1.49-55). The limitation "structural" is given in its broadest reasonable interpretation in light of the specification, which as defined in the dictionary is an adjective to define a material as used in building structures. In this case the polyurethane of Robbins is used in to build a tank, which is a structure therefore it is structural polyurethane. The corrugations of the one-sided corrugated cardboard forms gaps between the paper

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material coating layer and the inner main reservoir in which a sensor is placed (col.18, 1.1-19).

Regarding claims 4, 6, 8, and 10, Robbins teaches a process for manufacturing an underground reservoir consisting of the steps of providing a single component inner, main reservoir made from steel (col.16, 1.57-60 and col.17, 1.15-17). Covering an outer surface of said main reservoir with a first coating layer consisting of one-sided corrugated cardboard (col.16, 1.44-47), in which cardboard is a paper material and the one sided corrugated cardboard is impervious to the outer coating layer of resin (col.17, 1.1-11). Applying a second coating layer consisting of polyurethane over said first coating layer thereby forming bonded, two-component outer, secondary reservoir (col.12, 1.34-39). The thickness of the outer layer is approximately 0.1 inch or 2.54mm (col.12, 1.49-55). The limitation "structural" is given in its broadest reasonable interpretation in light of the specification, which as defined in the dictionary is an adjective to define a material as used in building structures. In this case the polyurethane of Robbins is used in to build a tank, which is a structure therefore it is structural polyurethane. The corrugations of the one-sided corrugated cardboard forms gaps between the paper

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material coating layer and the inner main reservoir in which a sensor is placed (col.18, 1.1-19).

Regarding claims 1, 2, 4, 6, and 8-10, Robbins fails to explicitly teach whether the polyurethane contains a solvent. However, Mowrer teaches that solvent based polyurethane coatings are replaced by solventless airless sprayed coatings in order to comply with government environmental and health hazard regulations that limit both the type and amount of volatile organic compounds (col.1, 1.40-49) and higher coating thicknesses can be performed without sagging, there is a shorting curing time, and there is less material to store handle and apply (col.7, 1.52-68). One of ordinary skilled in the art would have recognized that Robbins and Mowrer are analogous insofar as both references are concerned with forming protective coatings on metals in the construction industry.

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to select solventless polyurethane as the polyurethane coating used in Robbins in order to eliminate volatile solvents which present health or explosion hazards, allow the coating to be applied in thicker coatings, and have quicker curing time, which are all disadvantages of solvent based polyurethane, as taught by Mowrer.

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Regarding claims 13-15, 17, and 19-22, Robbins teaches a process for manufacturing an underground reservoir, the process consisting of the following steps. A single component inner, main reservoir made of carbon steel is provided (col.16, 1.57-60 and col.17, 1.15-17). Covering an outer surface of said main reservoir with a first coating layer consisting of one-sided corrugated cardboard (col.16, 1.44-47), in which cardboard is a paper material and the one sided corrugated cardboard is impervious to the outer coating layer of resin (col.17, 1.1-11). Spraying a polyurethane layer in the form of a second coating layer, over the impervious material, thereby forming a two-component outer secondary reservoir (col.12, 1.34-39). The outer reservoir is an electrically insulating non-metallic two-component material, because it is formed of paper material and polyurethane, which are electrically insulating. The corrugations of the one-sided corrugated cardboard forms gaps between the paper material coating layer and the inner main reservoir in which a sensor is placed (col.18, 1.1-19). The polyurethane layer is impact resistant. The thickness of the outer layer is approximately 0.1 inch or 2.54mm (col.12, 1.49-55).

Robbins fails to explicitly teach that the polyurethane is applied by an airless process or if the polyurethane contains a

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solvent. However, Mowrer teaches that solvent based polyurethane coatings are replaced by solventless airless sprayed coatings in order to comply with government environmental and health hazard regulations that limit both the type and amount of volatile organic compounds (col.1, 1.40-49) and higher coating thicknesses can be performed without sagging, there is a shorting curing time, and there is less material to store handle and apply (col.7, 1.52-68). One of ordinary skilled in the art would have recognized that Robbins and Mowrer are analogous insofar as both references are concerned with forming protective coatings on metals in the construction industry.

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to select solventless airless sprayed polyurethane coatings as the sprayed polyurethane coating used in Robbins in order to eliminate volatile solvents which present health or explosion hazards, allow the coating to be applied in thicker coatings, and have quicker curing time, which are all disadvantages of sprayed solvent based polyurethane coatings, as taught by Mowrer.

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8. Claims 5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robbins in view of Mowrer as applied to claims 4 and 13 above, and further in view of Mitchell (USPN 5,090,586).

Robbins and Mowrer taken as a whole teach all that is claimed in claims 4 and 13 as shown above, but fail to explicitly teach jet-blasting portions of the outer surface of said main reservoir to enhance the adhesion of said first coating layer. However, Mitchell teaches that it is a common technique to abrasive or "jet" blast steel for the purpose of enhancing bonding in the dual wall tank art (col. 4 lines 14-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a step in making Robbins to abrasive or "jet" blast the steel main reservoir before tack-bonding the corrugated cardboard to the steel reservoir in order to enhance bonding, as taught by Mitchell.

9. Claims 11-12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robbins in view of Mowrer as applied to claims 2, 6, and 17 above, and further in view of Bartelloni (USPN 4,510,019).

Robbins and Mowrer taken as a whole teach all that is claimed in claims 2, 6, and 17. Robbins also teach that vapor barrier sheet made of wax paper or saran wrap is added as part of the barrier layer in the double wall tank, in order to ensure that the porous layer is not dissolved by the resin of the outer layer coating (col.14, 1.30-41), but fails to explicitly teach the vapor barrier sheet of wax paper is formed from latex-based paper. However, Bartelloni teach that latex-based paper is used in construction as a paper that possesses impermeability, flexibility, and resistance (col.1, 1.19-30). Robbins teaches that the vapor barrier sheet must be resistant and impermeable (col.14, 1.30-41) and teaches two examples, waxed paper and Saran Wrap, which are both impermeable, flexible, resistant materials, for the vapor barrier sheet. One of ordinary skill in the art would have recognized that latex-based paper, which possesses the properties to perform the requirements of the vapor barrier sheet, would be used in forming a barrier between open-cell foam material and an outer resin layer of an underground storage reservoir, because latex-based paper is impermeable, flexible and resistant, as taught by Bartelloni.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the applicant's invention was made to use the latex-based paper of Bartelloni as the vapor

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barrier sheet of Robbins in order to provide a material that is impermeable, flexible and resistant, as taught by Bartelloni.

ANSWERS TO APPLICANT'S ARGUMENTS

10. Applicant's arguments regarding the 35 U.S.C. 102 and 103 rejections have been fully considered but are moot since the rejections have been withdrawn, and they have been addressed in the rejections above with regard to how the arguments relate to the new rejections.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Bruenjes whose telephone number is 571-272-1489. The examiner can normally be reached on Monday thru Friday from 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Christopher P Bruenjes

Examiner

Art Unit 1772

CPB

October 6, 2005


HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

10/7/05